



Seminarankündigung

Dienstag, 19. Mai 2015

17:15 Uhr

WSI, Seminarraum S 101

“Emerging materials for near- and mid-infrared photonic devices”

In this talk I will discuss the development of new semiconductor materials and heterostructures for applications in infrared emitters and detectors. The presentation will begin with a focus on efficiency limitations of InP- and GaSb-based near and mid-infrared lasers and then go on to discuss the potential interest in emerging materials such as the bismides for device applications. Examples of these materials include GaAsBi for which near-infrared lasers have now been demonstrated. The presentation will also discuss alloys such as GaAsBi(N)/GaAs and InGaAsBi/InP which offer the potential for lattice-matched narrow gap materials on GaAs or InP substrates. The talk will describe how experimental techniques including hydrostatic pressure may be used to probe the optical and electronic properties of photonic materials and devices through manipulation of their band structure. Examples of this include probing Auger effects in interband materials, carrier leakage in QCLs and the role of defects in InAs/InAsSb heterostructures.

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